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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,495	03/15/2004	Thuyen Le	068758.0176	9305

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EXAMINER
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AFSHAR, KAMRAN

ART UNIT	PAPER NUMBER
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2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/800,495

Applicant(s)

LE, THUYEN

Examiner

Kamran Afshar, 571-272-7796

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 03/15/2004
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-12 and 15-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites word(s) "can be" renders the claim(s) indefinite because the claim(s) 2 is not clear as to what are positively claimed.

Claims 3-12 and 15-16 are rejected as they are directly and or indirectly depended on rejected claim(s).

3. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites UMTS standard without providing any specific version or date. The use of air UMTS standard changes over time, thus, it is unclear to have the scope of a claim to change over time. Since, it is vigorously known in the art, organizations implementing those UMTS standard meet regularly and have the authority to modify the UMTS standard, any connection a claim may have to these UMTS standard may vary scope over time. If the UMTS standard changes, the disclosure may no longer support the limitation. Since the specification does not provide any specific date or version for the claimed UMTS standard, claims are indefinite.

### *Drawings*

4. Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

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any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

5. The disclosure is objected to because of the following informalities: Page 14, ¶ [0062] recites " FIG. 1 schematically depicts the circuit diagram of a device 1, etc., whereas Fig. 1 shows the table of a prior art where the code groups CG(m) are also found in the UMTS specification. **Appropriate correction is required.**

6. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

For example, Page 3, ¶ [0008], recites " Sequence z is constructed a follows, ". **Appropriate correction is required.**

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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8. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Rao (U.S. Patent 6,768,768 B2).

With respect to claim, Rao discloses a device for (See e.g. 106A- 106B of Fig. 1, 106 of Fig. 4) synchronization of a mobile radio receiver to a frame structure from a radio signal received from a base station (See e.g. 104A – 104C of Fig. 1, Co. 2, Lines 2-6), wherein a frame is divided into a stipulated number N of time slots, and the base station, per frame, sends a sequence of known frame synchronization codes known in the mobile radio receiver (See e.g. 16 frame, 256 SSCs, 15 time slots), comprising: a first unit to determine the energy values (See e.g. ,Co. 7, Lines 59-65) that are received for N consecutive time slots for each frame synchronization code per time slot by the mobile radio receiver (See e.g. 430 of Figs. 4-5), at least two intermediate memories (See e.g. 642, 644 of Fig. 6) to store the received energy values (See e.g. energy value, Co. 8, Lines 11-20) , and a second unit to calculate the frame start of the radio signal from the energy values stored (See e.g. 510 of Fig. 5, Co. 9, Lines 5-14) in the at least two intermediate memories (See e.g. 642, 644 of Fig. 6) and as a function of the known frame synchronization code (See e.g. PSC , SSCs, Co. 3, Lines 57-67, Co. 5, Table, 1).

Regarding claim 2, Rao discloses each sequence of frame synchronization codes that can be sent by the base station in a frame forms a code group (See e.g. group codes, frame, SSCs per frame, Co. 3, Line 66 – Co. 4, line 18), and the code groups are stored in at least two code group memories (See e.g. 642, 644 of Fig. 6) that are read-only memories (See e.g. ROM, read and write information, Co. 11, Line 65 – Co. 12, Line 5).

Regarding claim 3, Rao discloses the second unit is also laid out to calculate the code group (See e.g. energy value, Co. 4, Lines 44-50) sent by the base station from the energy values (See e.g. group codes , frame, SSCs per frame, Co. 3, Line 66 – Co. 4, line 18) stored in the at least two intermediate memories and as a function of the known code groups (See e.g. PSC , SSCs, Co. 3, Lines 57-67, Co. 5, Table, 1).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao (U.S. Patent 6,768,768 B2) in view of Terasawa (U.S. Pub. No.: 2003/0147365 A1).

Regarding claim 4, Rao discloses everything as discussed above in the rejected claim 1.

However, Rao is silent that an address generation unit is connected after the at least two code group memories, which generates addresses from the elements of the code group released from the at least two code group memories, the addresses are each fed to one of the at least two intermediate memories, and the at least two intermediate memories issue an energy value stored in it, which is designated by the address supplied to the corresponding intermediate memory. In an analogous field of endeavor, Terasawa discloses that the sequence generator of Rao's device (See Rao e.g. 440 DSP of Fig. 4) is in obviously the address generation unit is connected (See Terasawa e.g. DSP 430, 420 of Fig. 4, Page 4, Lines 1-4 of ¶ [0047], Page 5, ¶ [0055]) after the at least two code group memories (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provide above teaching of Terasawa to Rao, as vigorously known in the art a DSP can be used to generate address sequences that can be pre-computed and stored in memory (See Terasawa e.g. Page 5, Lines 8-11 ¶ [0055]). And / or decreased search time when a the unit is in idle mode, a low-power state (increasing standby time) where the unit is not actively transmitting or receiving voice or data, but is periodically monitoring the system (See Terasawa e.g. Lines 14-20 of ¶ [0008]).

Regarding claim 5, it is obvious that a first control unit to control the control output (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6) of elements of code groups from the at

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least two code group memories (See Terasawa e.g. DSP 430, 420 of Fig. 4, Page 4, Lines 1-4 of ¶ [0047], Page 5, ¶ [0055]).

Regarding claim 6, it is obvious that a second control unit to control generation of the addresses (See Terasawa e.g. DSP 430, 420 of Fig. 4, Page 4, Lines 1-4 of ¶ [0047], Page 5, ¶ [0055]) in the address generation units (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6).

Regarding claim 7, it is obvious that a third control (See Terasawa e.g. 930 of Fig. 9) element to control supply of addresses to the at least two intermediate memories (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6).

Regarding claim 8, it is obvious that an adder (See e.g. 550, 520 of Fig. 5) connected after the at least two intermediate memories, which sums up the energy values released by the at least two intermediate memories (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6), in which at least one of the summands, if necessary, is replaced by the energy value zero (See Rao, Zero, slot 0, Co. 4, Lines 58-64).

Regarding claim 9, it is obvious that a fourth control unit to control supply of summands to the adder (See Rao e.g. Co. 8, Lines 31-40).

Regarding claim 10, it is obvious that an accumulator (See Terasawa e.g. 460 of Fig. 4, 920 of Fig. 9) connected after adder (See Rao e.g. Co. 8, Lines 11-20), which sums up a stipulated number of energy values released in succession by the adder (See Rao e.g. Co. 9, Lines 15-19).

Regarding claim 11, it is obvious that a third unit connected after the accumulator to determine the largest energy value issued by the accumulator (See Terasawa e.g. 470 of Fig. 4, Rao e.g. 560 of Fig. 5).

Regarding claim 12, it is obvious that a fourth unit connected after the third unit to calculate the frame start of the radio signal sent by the base station and the code group sent by the base station (See Rao e.g. Co. 8, Lines 31-40).

Regarding claim 13, it is obvious that the energy values entered in the at least two intermediate memories correspond to the time slot in which the frame synchronization codes (See Rao e.g. 16 frame,

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256 SSCs, 15 time slots) underlying them were received and are marked with an index  $j$  (See e.g. index  $k$ , index  $i$ , equations, etc., Co. 7, Lines 4-35), and the received energy values (See Rao e.g. Co. 7, Lines 59-65) are entered as a function of their index  $j$  in (See e.g. index  $k$ , index  $i$ , equations, etc., Co. 7, Lines 4-35) the at least two intermediate memories (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6).

Regarding claim 14, it is obvious that each of the received energy values (See Rao e.g. Co. 7, Lines 59-65) is entered in precisely one of the at least two intermediate memories (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6), and at least one energy value is additionally entered (See e.g. PSC, SSCs, Co. 3, Lines 57-67, Co. 5, Table, 1) in another of the at least two intermediate memories (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6).

Regarding claim 15, it is obvious that the elements of the code groups corresponding to the time slot to which they refer are marked with the index  $n$  (See Rao e.g. index  $k$ , index  $i$ , equations, etc., Co. 7, Lines 4-35), and each element of code groups are entered as a function of their index  $n$  in precisely one of the at least two code group memories (See Rao, e.g. PSC, SSCs, Co. 3, Lines 57-67, Co. 5, Table, 1), and the number of code group memories is equal to the number of intermediate memories (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6).

Regarding claim 16, it is obvious that the elements of code groups with an even index  $n$  (See Rao e.g. index  $k$ , index  $i$ , equations, etc., Co. 7, Lines 4-35) are entered in a first code group memory and the element of the code group (See e.g. PSC, SSCs, Co. 3, Lines 57-67, Co. 5, Table, 1) with an odd index  $n$  are entered in a second code group memory (See Rao e.g. DSP 440, 430 of Fig. 4, 430, 520 of Fig. 5, 642, 644 of Fig. 6).

Regarding claim 17, it is obvious that the first unit is laid out so that the energy values (See Rao e.g. Co. 7, Lines 59-65) are calculated by means of correlations (See Rao e.g. 510 of Fig. 5) of the received frame synchronization codes with a common sequence underlying the known frame synchronization (See Rao e.g. 16 frame, 256 SSCs, 15 time slots) and a subsequent Hadamard transformation (See Rao e.g. 530 of Fig. 5, Co. 9, Lines 39-34).



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Regarding claim 18, inherently the data transmission between the base station and the mobile radio receiver is based on the UMTS standard (See Rao, e.g. 3GPP2 standard, W-CDMA standard, etc. Co. 1, Lines 20-35).

**Conclusion**

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- a) Chernikov (U.S. 6,539,368 B1).
  - b) Rioflo (U.S. 4,849,922).
  - c) Song (U.S. 7,061,893 B2).

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kamran Afshar whose telephone number is (571) 272-7796. The examiner can be reached on Monday-Friday.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, Eng, George can be reached @ (571) 272-3984. The fax number for the organization where this application or proceeding is assigned is **571-273-8300** for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Kamran Afshar

  
GEORGE ENG  
SUPERVISORY PATENT EXAMINER